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ABSTRACT

The University of Texas at El Paso (UTEP) produces more Hispanic graduates who seek doctoral degrees than any other university in the country. These students, however, still belong to that group of minorities who traditionally have done poorly in college, particularly in science, engineering, and mathematics. To remedy this situation, UTEP has instituted a collaborative learning program. Sponsored by the National Science Foundation as part of its Model Institutions for Excellence initiative, this program links courses in English composition with either science and math or engineering and math. Clusters of 25 students each travel from class to class as a group. All courses use learning communities and collaborative projects, most including writing across the curriculum. Since the first pilot program in 1995, Cluster students have done surprisingly well in terms of successful completion of precalculus math courses, which determine whether or not they will be allowed to continue in these majors. In fact, what was once a 75% failure rate has become a 75-80% pass rate. UTEP's learning communities initiative aims to redesign education to fit the specific needs of this particular population. Perhaps the most significant benefit of post-secondary learning communities appears in increased levels of student self-confidence. (Contains 8 references.) (CR)

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MINORITY STUDENTS AND THE LEARNING COMMUNITY EXPERIENCE: A CLUSTER EXPERIMENT

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Minority Students and the Learning Community Experience: a Cluster Experiment

The University of Texas at El Paso (UTEP)is a comprehensive public urban institution, a mid-size commuter campus located in the world's largest binational metropolitan center. The student population is sixty-six percent Hispanic. There are approximately 3% African-Americans and another 4% Asian-American, Native American or international students from non-Hispanic countries. Many of our students speak English as a second language; some are citizens of Mexico and cross the border daily to attend classes. The University produces more Hispanic grduates who seek doctoral degrees than any other university in the country; however, our students still belong to that group of minorities who traditionally have done poorly in college, particularly in science, engineering, and mathematics. Those who finish still have problems finding long-term jobs in these areas. Leslie Jones reports that "women and people of color are only represented in the sciences and engineering at less than half of the levels they occupy in the total labor force, they hold lower salary jobs with less status, and are unemployed or underemployed at significantly

higher rates than white men" (In AAUW 27).

To remedy this situation, UTEP has instituted a collaborative learning program. Sponsored by the National Science Foundation as part of its Model Institutions for Excellence initiative, our program links courses in English composition with either science and math or engineering and math. Clusters of 25 students each travel from class to class as a group. All courses use learning communities and collaborative projects. Most Clusters include writing across the curriculum.

Since the first pilot project in 1995, Cluster students have done surprisingly well in terms of successful completion of pre-calculus math courses, which determine whether or not they will be allowed to continue in these majors. In fact, what was once a 75% failure rate has become a 75-80% pass rate. Retention has been excellent in all courses attempted, and Cluster students have gone on to be successful in subsequent English, math, and science or engineering classes. Students give most credit for their success to the Cluster program and its encouragement of learning communities; they come away from the experience with strong friendship bonds, the desire and ability to use studey teams, and high degrees of self-confidence. Now, as clustering enters its fourth year, it seems safe to say that learning communities help

entering minority students adjust to college and help assure their continued progress.

One might think that because Hispanics make up the majority of student population at UTEP, they would enter this university at an advantage rather than as part of a disadvantaged minority. Unfortunately, this does not prove to be the case. More than half of our entering students are first-generation college attendees with no tradition of post-secondary education. They often represent low-income families, and their attendance comes at a great personal and family sacrifice. Some head families of their own. Most work at least part time; many hold 40-hour-a-week jobs in addition to school work. Ours is a commuter campus which students generally hurry to leave by noon so they can tend to home and work responsibilities. Furthermore, and perhaps most importantly, our classes generally follow traditional lecture-exam patterns, and as Jose Cardenas points out, "The needs of students whose cultural and ethnic backgrounds tend to be outside the traditional mainstream are typically not met by what might be characterized as one-size-fits-all education" (In Goodlad and Keating 273). UTEP's learning communities initiative aims to redesign education to fit the specific needs of our particular population.

What are learning communities, and how do they work?

A major aspect of the Cluster concept is that students travel together from class to class. This gives them an opportunity to make friends, feel like part of a familiar cohort, and form study groups. Our program also provides them with a physical place where they can meet outside of class, work on joint projects, receive free tutoring from peer facilitators, or just chat. All of this enables first-year commuter students to feel that they belong at the university; they do not have to rush away from campus just because classes are over for the day.

In terms of learning style and classroom pedagogy, the Clusters focus on collaboration and community building. Each student is assigned to a base group (either randomly or by teacher or self-selection) which remains constant all semester and from class to class. Base group members select names and logos with which they very quickly identify; members meet at least once a day in at least one class, but often in each class, to initiate discussions or to process the day's activities. They also work on collaborative projects, for which they may receive both individual and group grades. Often groups complete a task and receive a team grade based on the performance of one randomly selected member.

This requires the team to work until every member has mastery and satisfies the most basic assumption of cooperative learning: "the idea that students work together to learn and are responsible for their teammates' learning as well as their own" (Slavin 3). Not only does this build team spirit, but it also gives students opportunities to teach what they know, thus confirming knowledge and strengthening confidence.

Why are learning communities useful in teaching minority students?

This kind of collaborative activity is particularly amenable to minority learners. David and Roger Johnson (1974) report on research indicating that for all students "a cooperative goal structure results in higher achievement than does a competitive goal structure" (220) and that cooperative learning helps minority students gain confidence at the same time students of different ethnic groups learn to accept and like one another (Johnson, Johnson & Maruyama). Studies by Spencer Kagan and associates, working on the hypothesis that "Mexican-American children display a more cooperative orientation than their Anglo-American peers," show that "cooperative learning provides a set of methods for designing education procedures that are more consistent with the

social orientation of various cultural subgroups in society" (In Slavin 258). These and many recent studies, including our study at UTEP, suggest that learning communities can serve minority populations well.

What is the role of English composition in the learning community?

The role of English composition in the Clusters is pivotal because writing serves as a means to articulate what is being studied in all Cluster classes. Also, because of a relatively flexible format, the composition class can function as integrator, wherein the major components of writing across the curriculum come into focus and where students have opportunities to discuss and write about the total Cluster experience. English assignments often focus on and utilize research about the subject matter under discussion in math, science, or engineering classes. In 1997, science students studied AIDs related issues in one section and evolution in another. Their English cluster teachers included these issues as subject matter for reading, analysis, discussion, and writing. Engineering students who concentrated on the lumbering industry and related controversy read, talked, and wrote about this subject in English class. In another kind of linkage,

English students wrote a history of logarithms when they were studying them in math class; they also integrated mathematical analyses of data into their English reports. This type of cross-curricular work helped students resist the feelings of fragmentation that often beset first-year college attendees at the same time it enriched the scope of their essays and their knowledge in general.

General benefits

Students and instructors gain considerably from learning communities in terms of improved communication. Instructors working together with at least two others in a cluster cohort meet to plan lessons and discuss student progress; thus they have opportunities to become well acquainted with faculty from other departments. In one pilot project, a faculty cohort advised and mentored students with great success. Because faculty members communicate with one another, they are able to intervene quickly if an individual student fails to progress. Because teachers and students communicate with one another, they have a better chance of discovering quickly situations which require intervention.

Teacher-student relationships in learning communites are based on the adage that a teacher should be "the guide on the

side, not the sage on the stage" (Johnson, Johnson & Holubec). This means that instructors become helping members of the community rather than distant pundits. Students in Clusters indicated their awareness of teacher accessibility by meeting frequently with them (It's amazing how much more willing students are to do this in groups than individually.) and by their responses on exit evaluations. At the beginning of the 1997 semester, only 8 of 100 students agreed strongly with the statement "I can confidently approach a professor/instructor when it is necessary." By the end of the semester, 51 students agreed strongly. At the beginning of the semester, 26 agreed strongly that they saw Cluster professors as advisors and mentors. By semester's end, 44 agreed strongly.

Perhaps the most significant benefit of post-secondary learning communities appears in increased levels of student self-confidence. Robert Slavin (1990) surmises that "the most important psychological outcome of cooperative learning is the effect on student self-esteem" (43) because it raises students' belief that they are valuable, important, productive members of the classroom society and, consequently, of society as a whole. These assumptions appear validated by the experience at UTEP. At the beginning of the 1997 Cluster, 56 students agreed strongly with

the statement "I am confident that I will earn a bachelor's degree." By semester's end, 87 agreed strongly with that statement. When responding to the statement "The instructors who teach Cluster classes believe I will be successful and will earn my degree," 44 students agreed strongly at the end of the semester as opposed to only 7 at the beginning. These numbers indicate a growth in both student self-confidence and in their belief that others have confidence in them.

Our evaluators are in the process of gathering and analyzing further data at the same time our program expands to include all 600 or so entering science, engineering, and math students. Much more will be learned as UTEP's learning community experiment continues. Already, however, I can say emphatically that minority students enjoy learning communities and that clustering helps them adapt to college life. Working in teams helps them develop confidence,learn subject matter, and make friends. All of this bodes well for retention and graduation expectations. I believe time will prove that the majority of these Cluster students can also find and keep jobs in math, science, and engineering fields--areas where faces of color have been too scarce.

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